PALM Intranet

Application Number [ ] SEARCH

IDS Flag Clearance for Application 09471255

IDS Information

Content	Mailroom Date	Entry Number	IDS Review	Reviewer
M844	08-16-2000	10	☑	06-14-2001 16:39:53 EXPO-CONV
M844	08-16-2000	11	☑	06-14-2001 16:39:54 EXPO-CONV
M844	11-16-2000	12	☑	06-14-2001 16:39:54 EXPO-CONV
M844	08-12-2003	55	☑	12-08-2003 14:08:44 jmason
M844	07-05-2005	80	☑	07-11-2005 15:13:01 jmason
M844	03-21-2000	8	☑	06-14-2001 16:39:53 EXPO-CONV

UPDATE

WEST Search History

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updated search

DATE: Friday, March 17, 2006

Hide?	Set Name	Query	Hit Count
		DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=OR	
☐	L1	hamel.in. or brodeur.in. or pineau.in. or martin.in. or rioux.in. or charland.in.	144378
☐	L2	L1 and strep$	2329
☐	L3	L2 and protect$	1383
☐	L4	L3 and (phte or pht or bvh or bvh3 or bvh-3)	16
☐	L5	L3 and (phte or pht or bvh3 or bvh-3)	4

END OF SEARCH HISTORY

Interference sequence search - reviewed results w/ Tony Caputa, Quality Lead. No interferences. No rejections based on 112 relative to full sequence claimed

1. 20030232976. 20 Dec 02. 18 Dec 03. Streptococcus antigens. Hamel, Josee, et al. 536/23.1; C07H021/02 C07H021/04.

☐ 2. 20030166240. 24 Apr 01. 04 Sep 03. DNA & protein binding miniature proteins. Shrader, Alanna Schepartz, et al. 435/226; 435/235.1 435/320.1 435/325 435/5 435/68.1 435/69.1 536/23.2 C12N009/64 C12Q001/70 C07H021/04 C12N007/00 C12P021/02 C12P021/06 C12N005/06.

☐ 3. 20030077293. 20 Jun 01. 24 Apr 03. Streptococcus antigens. Hamel, Josee, et al. 424/190.1; 435/183 435/252.3 435/320.1 435/69.3 536/23.7 A61K039/02 C07H021/04 C12N009/00 C12P021/02 C12N001/21 C12N015/74.

☐ 4. WO 200198334A. New Streptococcus pneumoniae BVH-3 and BVH-11 variant and epitope-bearing polypeptides, useful as vaccine components for treating or preventing streptococcal infections such as otitis media, meningitis, and bacteremia. BRODEUR, B R, et al. A61K039/00 A61K039/02 A61K039/09 A61K039/39 A61P011/00 A61P027/16 A61P031/04 C07H021/04 C07K014/315 C07K019/00 C12N001/15 C12N001/19 C12N001/21 C12N005/10 C12N009/00 C12N015/09 C12N015/30 C12N015/31 C12N015/63 C12N015/74 C12P021/02 C12N015/63 C12R001:46.

First Hit

L5: Entry 3 of 4 File: PGPB Apr 24, 2003

PGPUB-DOCUMENT-NUMBER: 20030077293
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030077293 A1

TITLE: Streptococcus antigens

PUBLICATION-DATE: April 24, 2003

INVENTOR-INFORMATION:

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APPL-NO: 09/884465 [PALM]
DATE FILED: June 20, 2001

RELATED-US-APPL-DATA:
Application is a non-provisional-of-provisional application 60/212683, filed June 20, 2000,

INT-CL-PUBLISHED: [07] A61 K 39/02, C07 H 21/04, C12 N 9/00, C12 P 21/02, C12 N 1/21, C12 N 15/74

US-CL-PUBLISHED: 424/190.1; 435/69.3, 435/252.3, 435/320.1, 536/23.7, 435/183
US-CL-CURRENT: 424/190.1; 435/183, 435/252.3, 435/320.1, 435/69.3, 536/23.7

REPRESENTATIVE-FIGURES: NONE

ABSTRACT:

Streptococcus polypeptides and polynucleotides encoding them are disclosed. Said polypeptides may be useful vaccine components for the prophylaxis or therapy of streptococcus infection in animals. Also disclosed are recombinant methods of producing the protein antigens as well as diagnostic assays for detecting streptococcus bacterial infection.

erably monoclonal. It may be specific for a number of epitopes associated with the streptococcus pneumoniae polypeptides but is preferably specific for one.

[0160] The following are reference tables summarizing the sequences disclosed in the present application:

TABLE A, B and C Variants and Epitope of BVH-3-

[0161]

TABLE A

Family	Polypeptide SEQ ID NO
BVH-3	
New 21	aa 396–1039 of SEQ ID. 6
New 25	aa 233–1039 of SEQ ID. 6
New 40	aa 408–1039 of SEQ ID. 6

[0162]

TABLE B

Family	Polypeptide SEQ ID NO
BVH-3	
NEW1-mut1**	235
NEW35A	236
NEW42	237
NEW49	238
NEW50	239
NEW51	240
NEW52	241
NEW53	242
NEW54	243
NEW55	244
NEW56	245
NEW56-mut2**	245
NEW56-mut3**	245
NEW57	246
NEW63	247
NEW64	248
NEW65	249
NEW66	250
NEW76	251
NEW105	252
NEW106	253
NEW107	254

**silent mutation, i.e. the polypeptide is the same as New1 or New 56

[0163]

TABLE C

Epitopes of BVH-3	
7G11.7	12
7G11.9	13
B12D8.2	19
7F4.1	20
14F6.3	18
4D3.4	14
10C12.7	17
8E3.1	15
1G2.2	16

[0164]

TABLE D

TABLE D, E and F Variants and Epitope of BVH-11-

Family	Polypeptide SEQ ID NO
BVH-11	
New19	aa 497–838 of Seq. ID 8
New24	aa 227–838 of Seq. ID 8

[0165]

TABLE E

Family	Polypeptide SEQ ID NO
BVH-11	
New 43	258
NEW60	293
NEW61	294
NEW62	295
NEW80	296
NEW81	297
NEW82	298
NEW83	299
NEW84	300
NEW85	301
NEW88D1	302
NEW88D2	303
NEW88	304

[0166]

TABLE F

epitopes of BVH-11	
10D7.5	21
10G9.3	22
B11B8.1	22
10A2.2	22
11b8.4	23
3A4.1	24

[0167]

TABLE G

Family	Polypeptide SEQ ID NO
Chimeras with BVH-11 and BVH-3	
New17	M*-NEW5-G*P*-NEW1
New20	M*-NEW1-G*P*-NEW5
New26	M*-NEW10-G*P*-NEW25
New27	M*-NEW19-G*P*-NEW25
New28	M*-NEW10-G*P*-NEW1
New29	M*-NEW5-G*P*-NEW25
New30	M*-NEW4-G*P*-NEW25
New31	M*-NEW4-G*P*-NEW1
NEW32	M*-NE19-G*P*-NEW1

*OPTIONAL AMINO ACID

[0168]

TABLE H

Family	Polypeptide SEQ ID NO
Chimeras with BVH-11 and BVH-3	
VP 89	305
VP 90	306
VP 91	307
VP 92	308
VP 93	309
VP 94	310
VP 108	311
VP109	312
VP 110	313
VP 111	314
VP112	315
VP113	316
VP114	317
VP115	318
VP116	319
VP117	320
VP119	321
VP120	322
VP121	323
VP122	324
VP123	325
VP124	326

EXAMPLE 1

[0169] This example describes the bacterial strains, plasmids, PCR primers, recombinant proteins and hybridoma antibodies used herein.

[0170] *S. pneumoniae* SP64 (serogroup 6) and SP63 (serogroup 9) clinical isolates were provided by the Laboratoire de la Santé Publique du Québec, Sainte-Anne-de-Bellevue; Rx1 strain, a nonencapsulated derivative of the type 2 strain D39 and the type 3 strain WU2 were provided by David E. Briles from University of Alabama, Birmingham and the type 3 clinical isolate P4241 was provided by the Centre de Recherche en Infectiologie du Centre Hospitalier de l'Université Laval, Sainte-Foy. *E. coli* strains DH5α (Gibco BRL, Gaithesburg, Md.); AD494 (λDE3) (Novagen, Madison, Wis.) and BL21 (λDE3) (Novagen) as well as plasmid superlinker pSL301 vector (Invitrogen, San Diego, Calif.); PCMV-GH vector (gift from Dr. Stephen A. Johnston, Department for Biochemistry, University of Texas, Dallas, Tex.); pET32 and pET21 (Novagen) and pURV22.HIS expression vectors (**FIG. 30**) were used in this study. The pURV22.HIS vector contains a cassette of the bacteriophage λ cI857 temperature-sensitive repressor gene from which the functional P_R promoter has been deleted. The inactivation of the cI857 repressor by a temperature increase from the range of 30-37° C. to 37-42° C. results in the induction of the gene under the control of promoter λPL. The PCR primers used for the generation of the recombinant plasmids had a restriction endonuclease site at the 5'end, thereby allowing directional cloning of the amplified product into the digested plasmid vector. The PCR oligonucleotide primers used are listed in the following Table 1. The location of the gene sequences coding for BVH-3, BVH-11 and BVH-11-2 gene products is summarized in the **FIG. 25, FIG. 26** and **FIG. 27**, respectively.

TABLE 1

List of PCR oligonucleotide primers

Primer	SEQ ID NO	Sequence 5'–3'	Nucleotide position	Restriction sites
OCRR 479	25	cagtagatctgtgcct atgcactaaac	SEQ ID 1: 61–78 SEQ ID 9: 1–18	BglII
OCRR 480	26	gatctctagactactg ctattccttacgctat g	SEQ ID 2: 4909–4887 SEQ ID 9: 2528–2519	XbaI
OCRR 497	27	atcactcgagcattac ctggataatcctgt	SEQ ID 1: 1525–1506	XhoI
OCRR 498	28	ctgctaagcttatgaa agatttagat	SEQ ID 1: 1534–1548	HindIII
OCRR 499	29	gatactcgagctgcta ttccttac	SEQ ID 2: 4906–4893	XhoI
HAMJ 172	30	gaatctcgagttaagc tgctgctaattc	SEQ ID 1: 675–661	XhoI
HAMJ 247	31	gacgctcgagcgctat gaaatcagataaattc	SEQ ID 1: 3117–3096	XhoI
HAMJ 248	32	gacgctcgagggcatt acctggataatcctgt tcatg	SEQ ID 1: 1527–1501	XhoI
HAMJ 249	33	cagtagatctcttcat catttattgaaaagag g	SEQ ID 2: 1749–1771	BgIII
HAMJ 278	34	ttatttcttccatatg gacttgacagaagagc aaattaag	SEQ ID 1: 1414–1437	NdeI
HAMJ 279	35	cgccaagcttcgctat gaaatcagataaattc	SEQ ID 1: 3117–3096	HindIII
HAMJ 280	36	cgccaagcttttccac aatataagtcgattga tt	SEQ ID 1: 2400–2377	HindIII
HAMJ 281	37	ttatttcttccatatg gaagtacctatcttgg aaaaagaa	SEQ ID 1: 2398–2421	NdeI
HAMJ 300	38	ttatttcttccatatg gtgcctatgcactaaa ccagc	SEQ ID 1: 62–82	NdeI
HAMJ 313	39	ataagaatgcggccgc ttccacaatataagtc gattgatt	SEQ ID 1: 2400–2377	NotI
OCRR 487	40	cagtagatctgtgctt atgaactaggtttgc	SEQ ID 3: 58–79	BglII
OCRR 488	41	gatcaagcttgctgct acctttacttactctc	SEQ ID 4: 2577–2556	HindIII
HAMJ 171	42	ctgagatatccgttat cgttcaaacc	SEQ ID 3: 1060–1075	EcoRV
HAMJ 251	43	ctgcaagcttttaaag gggaataatacg	SEQ ID 3: 1059–1045	HindIII
HAMJ 264	44	cagtagatctgcagaa gccttcctatctg	SEQ ID 3: 682–700	BglII
HAMJ 282	45	tcgccaagcttcgtta tcgttcaaaccattgg g	SEQ ID 3: 1060–1081	HindIII
HAMJ 283	46	ataagaatgcggccgc cttactctcctttaat aaagccaatagtt	SEQ ID 3: 2520–2492	NotI
HAMJ 284	47	catgccatggacattg atagtctcttgaaaca gc	SEQ ID 3: 856–880	NcoI
HAMJ 285	48	cgccaagcttcttact ctcctttaataaagcc aatag	SEQ ID 3: 2520–2494	HindIII
HAMJ 286	49	cgacaagcttaacatg gtcgctagcgttacc	SEQ ID 3: 2139–2119 SEQ ID 5: 2210–2190	HindIII
HAMJ 287	50	cataccatgggccttt atgaggcacctaag	SEQ ID 3: 2014–2034	NcoI

Summary of Invention Paragraph:
[0007] There remains an unmet need for Streptococcus antigens that may be used as components for the prophylaxis, diagnostic and/or therapy of Streptococcus infection.

Brief Description of Drawings Paragraph:
[0023] FIG. 7 illustrates the construct evolution from BVH-3 and BVH-11-2 to the chimeric VP147.

Brief Description of Drawings Paragraph:
[0025] FIG. 9 represents the amino acid sequence of BVH-3 polypeptide; SEQ ID NO: 7.

First Hit

L5: Entry 1 of 4 File: PGPB Dec 18, 2003

PGPUB-DOCUMENT-NUMBER: 20030232976
PGPUB-FILING-TYPE: new
DOCUMENT-IDENTIFIER: US 20030232976 A1

TITLE: Streptococcus antigens

PUBLICATION-DATE: December 18, 2003

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US-CL-CURRENT: 536/23.1

CLAIMS:

What is claimed is:

1. An isolated polynucleotide comprising a polynucleotide chosen from; (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (c) a polynucleotide encoding a polypeptide having an amino sequence chosen from SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (d) a polynucleotide encoding a polypeptide capable of raising antibodies having binding specificity for a polypeptide having a sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (e) a polynucleotide encoding an epitope bearing portion of a polypeptide chosen from SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (f) a polynucleotide comprising a sequence chosen from SEQ ID NOS: 4, 5 or 6 or fragments or analogs thereof; and (g) a polynycleotide complementary to a polynucleotide in (a), (b), (c), (d), (e) or (f).

2. An isolated polynucleotide comprising a polynucleotide chosen from; (a) a polynucleotide encoding a polypeptide having at least 70% identity to a second polypeptide chosen from: SEQ ID 1, 2, 3, 90 to 115 or 141 to 148; (b) a polynucleotide encoding a polypeptide having at least 95% identity to a second polypeptide chosen from: SEQ ID 1, 2, 3, 90 to 115 or 141 to 148; (c) a polynucleotide encoding a polypeptide having an amino sequence chosen from SEQ ID 1, 2, 3, 90 to 115 or 141 to 148; (d) a polynucleotide encoding a polypeptide capable of raising antibodies having binding specificity for a polypeptide having a

sequence chosen from: SEQ ID 1, 2, 3, 90 to 115 or 141 to 148; (e) a polynucleotide encoding an epitope bearing portion of a polypeptide chosen from SEQ ID 1, 2, 3, 90 to 115 or 141 to 148; (f) a polynucleotide comprising a sequence chosen from SEQ ID NOS: 4, 5 or 6; and (g) a polynycleotide complementary to a polynucleotide in (a), (b), (c), (d), (e) or (f).

3. The polynucleotide of anyone of claims 1 or 2, wherein said polynucleotide is DNA.

4. The polynucleotide of anyone of claims 1 or 2, wherein said polynucleotide is RNA.

5. The polynucleotide of claim 1 that hybridizes under stringent conditions to either (a) a DNA sequence encoding a polypeptide or (b) the complement of a DNA sequence encoding a polypeptide; wherein said polypeptide comprises a sequence chosen from SEQ ID NOS: 1, 2, 3, 90 to 115, 141 to 148 or fragments or analogs thereof.

6. The polynucleotide of claim 2 that hybridizes under stringent conditions to either (a) a DNA sequence encoding a polypeptide or (b) the complement of a DNA sequence encoding a polypeptide; wherein said polypeptide comprises a sequence chosen from SEQ ID NOS: 1, 2, 3, 90 to 115 or 141 to 148.

7. The polynucleotide of claim 1 that hybridizes under stringent conditions to either (a) a DNA sequence encoding a polypeptide or (b) the complement of a DNA sequence encoding a polypeptide; wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising a sequence chosen from SEQ ID NOS: 1, 2, 3, 90 to 115, 141 to 148 or fragments or analogs thereof.

8. The polynucleotide of claim 2 that hybridizes under stringent conditions to either (a) a DNA sequence encoding a polypeptide or (b) the complement of a DNA sequence encoding a polypeptide; wherein said polypeptide comprises at least 10 contiguous amino acid residues from a polypeptide comprising a sequence chosen from SEQ ID NOS: 1, 2, 3, 90 to 115 or 141 to 148.

9. An isolated polynucleotide having a sequence comprising a sequence chosen from SEQ ID NOs: 4, 5, 6 or fragments or analogs thereof.

10. An isolated polynucleotide having a sequence comprising a sequence chosen from SEQ ID NOs: 4, 5 or 6.

11. A vector comprising the polynucleotide of claim 1, wherein said DNA is operably linked to an expression control region.

12. A vector comprising the polynucleotide of claim 2, wherein said DNA is operably linked to an expression control region.

13. A host cell transfected with the vector of claim 11.

14. A host cell transfected with the vector of claim 12.

15. A process for producing a polypeptide comprising culturing a host cell according to claim 13 under conditions suitable for expression of said polypeptide.

16. A process for producing a polypeptide comprising culturing a host cell according to claim 14 under conditions suitable for expression of said polypeptide.

17. An isolated polypeptide comprising a polypeptide chosen from: (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (c) a polypeptide having an amino acid sequence chosen from SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (d) a polypeptide capable of raising antibodies having binding specificity for a second polypeptide having a sequence chosen from SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (e) an epitope bearing portion of a polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115, 141 to 148 or fragments, analogs or derivatives thereof; (f) the polypeptide of (a), (b), (c), (d) or (e), wherein the N-terminal Met residue is deleted; or (g) the polypeptide of (a), (b), (c), (d), (e), or (f) wherein the secretory amino acid sequence is deleted.

18. an isolated polypeptide comprising a member chosen from: (a) a polypeptide having at least 70% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; (b) a polypeptide having at least 95% identity to a second polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; (c) a polypeptide having an amino acid sequence chosen from SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; (d) a polypeptide capable of raising antibodies having binding specificity for a second polypeptide having a sequence chosen from SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; (e) an epitope bearing portion of a polypeptide having an amino acid sequence chosen from: SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; (f) the polypeptide of (a), (b), (c), (d) or (e) wherein the N-terminal Met residue is deleted; or (g) the polypeptide of (a), (b), (c), (d), (e) or (f) wherein the secretory amino acid sequence is deleted.

19. A chimeric polypeptide comprising two or more polypeptides chosen from SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148 or fragments, analogs or derivatives thereof; provided that the polypeptides are linked as to form a chimeric polypeptide.

20. A chimeric polypeptide comprising two or more polypeptides chosen from SEQ ID NO: 1, 2, 3, 90 to 115 or 141 to 148; provided that the polypeptides are linked as to form a chimeric polypeptide.

21. A pharmaceutical composition comprising a polypeptide according to any one of claims 13 to 14 and a pharmaceutically acceptable carrier, diluent, adjuvant or liposome.

22. A method for therapeutic or prophylactic treatment of meningitis, otitis media, bacteremia or pneumonia infection in an individual susceptible to meningitis, otitis media, bacteremia or pneumonia infection comprising administering to said individual a therapeutic or prophylactic amount of a composition according to claim 21.

23. A method for therapeutic or prophylactic treatment of streptococcal bacterial infection in an individual susceptible to streptococcal infection comprising administering to said individual a therapeutic or prophylactic amount of a composition according to claim 21.

24. A method according to claim 22, wherein said individual is a mammal.

25. A method according to claim 23, wherein said individual is a mammal.

26. A method according to claim 22, wherein said individual is a human.

27. A method according to claim 23, wherein said individual is a human.

28. A method according to claim 22, wherein said bacterial infection is S.pneumoniae, group A streptococcus (pyogenes), group B streptococcus (GBS or agalactiae), dysgalactiae, uberis, nocardia or Staphylococcus aureus.

29. A method according to claim 22, wherein said bacterial infection is S.pneumoniae.

30. Use of the pharmaceutical composition according to claim 21 for the prophylactic or therapeutic treatment of Streptococcal infection in an animal susceptible to or infected with streptococcal infection comprising administering to said animal a prophylactic or therapeutic amount of the composition.

31. A kit comprising a polypeptide according to anyone of claims 17 to 20 for detection or diagnosis of streptococcus infection.